Deliverables and Tasks for Near Detector Installation and Integration

For Deliverable items, the pertinent piece of information to be provided is the delivery schedule. In a few cases, the precise list of what is getting delivered might also be required. For Task items, the pertinent information can be any or all of the following: an understanding the work involved, the time required to do it, the schedule for doing the work, and the precise identification of the manpower. A Point-of-Contact is a person who coordinates between a specific FNAL support group and the experiment. The information in BLUE is what is known at this time, or has been discussed in previous planning sessions.

1) Hall-wide services

a) LAN
   i) Task – Planning – the layout, number of ports on DAQ loop, number of ports on main loop, diagnostic ports, direct data logging line to Feynman
   ii) Task – Point-of-Contact with Computing Division Networking Group
   iii) Task - Post BO installation schedule, and installation installation work done by FNAL CD Networking

b) Grounding
   i) Task – gather the grounding requirements of each Rack System, and feedback to the design of each Rack Layout
   ii) Task – Point-of-Contact between experiment and FNAL site support, who will coordinate post-BO electrical installations (i.e. AC wiring of Racks)

c) Hall equipment layout
   i) Task – update and posting of CAD drawing, showing floor layout of all systems, including non-readout systems, such as the coil power supply, the LCW, etc. CJames

2) Detector Hardware for Light Readout and Injection

a) Fiber Cables
   i) Deliverable – cables from OMC, schedule Sussex
   ii) Task – Checkout, sorting and labeling of cables
   iii) Task – installation of cables from detector to trays UK technician

b) Phototube boxes
   i) Deliverable – schedule RAL
   ii) Task – checkout of boxes, manpower requirements
   iii) Task – installation of boxes in Racks – above ground
   iv) Task – installation of fiber cables from trays to boxes – below ground UK technician

c) LI system
   i) Deliverable – crates All Delivered
   ii) Task – layout of LI rack – coordinate with Master rack
   iii) Task – installation of crates in their racks
   iv) Task – installation of racks and cables underground, and attachment of cables to detector planes UK technician

d) HV system
   i) Deliverable – HV cables All Delivered
   ii) Task – checkout, sorting, and labeling of cables
   iii) Task – underground installation of cables

iv) Task – HV rack layout, 1440 installation in racks, and underground installation

3) Readout Electronics Hardware

a) FE Electronics
   i) Deliverables – schedule FE crates, FE PS, and associated cabling Argonne
   ii) Deliverables – schedule for FE boards (Minder, Keeper, Trigger) Argonne
   iii) Deliverable – schedule for phototube to Minder cables, and for Minder to Master cables
   iv) Task – layout of FE racks
   v) Task – fabrication of FE racks FNAL tech staff
   vi) Task – underground installation of racks FNAL tech staff
   vii) Task – underground installation of boards and cabling

b) Master Electronics
   i) Deliverable – schedule for Master crates and PS, and associated cabling All crates, PS delivered, Argonne for cabling
   ii) Deliverable – schedule for Master boards, VTM Argonne, IIT
   iii) Task – layout of Master racks – coordinate with LI system
   iv) Task – fabrication of Master racks
   v) Task – underground installation of racks FNAL tech staff
   vi) Task – installation of boards and cabling

c) Clock Electronics
   i) Deliverable – GPS antenna and receiver
   ii) Deliverable – central clock computer and software
   iii) Deliverables – Near Electronics clock distribution crate, PS, boards, cables
   iv) Task – layout and fabrication of clock distribution rack IIT
   v) Task – underground installation of clock distribution rack FNAL tech staff
   vi) Task – underground installation of GPS and central clock

4) DAQ system Hardware

a) Deliverable – computers and PVIC for underground, computers and/or monitors for Control room RAL
b) Task – underground installation of DAQ racks FNAL tech staff
c) Task – underground installation of DAQ components, including cables
d) Task – Control Room installation of DAQ monitors/computers

5) DCS and Monitoring Hardware

a) RPS
   i) Deliverables – RPS and AC trip boxes for FE racks, and all associated sensors and cables Duluth
   ii) Deliverables – RPS and AC trips boxes for Master racks, and all associated sensors and cables Duluth
   iii) Deliverables – RPS and AC trip boxes for all other rack types, and all associated sensors and cables Duluth
   iv) Task – coordinate RPS layout within all other rack layouts Duluth, FNAL
   v) Task – design and fabricate all support systems for sensors within racks
   vi) Task – above ground installation and checkout of RPS. Point-of-Contact with FNAL PPD safety review
   vii) Task – underground installation of DCS racks FNAL tech staff
   viii) Task – underground installation and checkout of RPS

b) Other DCS hardware
   i) Deliverables – sensors for Hall environment Duluth
   ii) Deliverables – all DCS computers, including those for HV monitoring, and other system monitoring, and computers/monitors for the Control room
   iii) Task – identify any other DCS hardware required Duluth
   iv) Task – underground installation of all other hardware
c) BDot Coil monitor
   i) Deliverables – readout boards and cable, crates, PS, and control computers UMinn
   ii) Task – layout of Bdot racks
   iii) Task – location of Bdot racks
   iv) Task – fabrication of Bdot racks, above ground
   v) Task – installation of Bdot racks and cables underground racks by FNAL tech staff

6) System Integration and Commissioning

This particular topic assumes that very little NEW software development needs to be done for these tasks – much of the Detector DAQ, DCS, and Online has already been running at the Far Detector and shouldn't require much adjustment to be used at the Near (right?). But we do need NAMES of those who will do the tasks, and a Schedule showing the time frame in which the tasks need to be started and completed.

a) Task – electronics checkout, with sub-system checks as each Master rack is filled and cabled
b) Task – central clock software checkout
c) Task –DAQ checkout, with sub-system checking as each Branch is installed. Local Hall running of Control software
d) Task –LI system pulsing Control software checkout, with sub-system checkout as each crate is cabled up
e) Task – checkout of DCS and HV Control software
f) Task – operating both DAQ and DCS (and LI via DCS) from the Control room as the default
g) Task – installation of ACNET crates in both the Hall and the Control room – development of DCS software to retrieve ACNET data, enter into MINOS datastream, and displays for the Control room
h) Task – running of Online monitoring, using cosmic and/or LI data
i) Task – what else is needed to be ready for Beam – what is needed to meet the requirements of the DOE commissioning milestones?